Representative of Every Interest

# The Citrus Industry

Representing No Special Interest

COLLEGE LIBRARY
JUL 23 1961

## *In This Issue:*

Fertilization Of Water-Damaged Citrus Trees

What Is The Value Of A Citrus Tree And When Should It Be Removed?

New Factors In Use Of Citrus Products Emphasized At Mutual's Annual Meet

Stocks Used For Citrus

Short Pickings From Around The Florida Citrus Belt

How Nematodes Get Around

Bond Requirements For Agricultural Dealers To Be Tightened

Girdling To Increase Fruit Set . . . Use It Cautiously

Governor Appoints Members Of Florida Citrus Commission

Single Copy ..... 15 Cents

Subscription
$1.00 Per Year In Continental U. S.
$2.50 Per Year Outside

KEY SCALES, JR.
of Weirsdale, named chairman of Florida Citrus Commission

VOL. 42 — NO. 7 JULY, 1961 BARTOW, FLORIDA

# 2 new International® (grove and orchard) tractors!

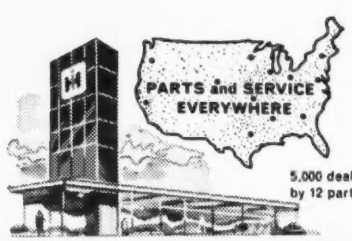
Tailor-made for maximum earnings, that's the story of new International 340 and 460 grove and orchard tractors.

Whether you choose the amazing 340 that handles a 7½-foot harrow and similar equipment to perfection, or the larger, job-speeding 52 hp* 460, you get an unmatched combination of profit-boosting features. Both tractors are low, compact, and completely shielded to protect fruit, trees, and operator. Both are available with your choice of thoroughly proved gasoline or Diesel engines. Easy-operating, over-center hand clutch, individual foot brakes, wide, low platform, and adjustable deep-cushion seat are standard equipment. Famous Torque-Amplifier that boosts pull power up to 45% on-the-go also is available.

**Maximum belt hp corrected to standard conditions*

**There's plenty of standing room** on new International tractors thanks to the new wide, low platform . . . complete protection with full-crown fenders and operator shielding. Low-profile harrow is the new McCormick No. 50. It's available in 7½ or 10-foot size with mechanical or hydraulic controls.

New International 340 and 460 fruit-grower specials will be displayed by your International Harvester dealer soon! See these new money-makers. Put one to test. See for yourself that these new tractors will do more, save more than all others.




**INTERNATIONAL HARVESTER**

*World's largest manufacturer of farm equipment*

# STOCKS USED FOR CITRUS

Nursery stock movement in 1959-60 from Florida nurseries to Florida destinations was the second highest of record at 2,539,076 trees. This movement was 120 percent above the 1928-60 average and 46 percent above the 1953-58 average.

Citrus tree movement from Florida nurseries for planting in Florida groves and dooryards as reported by nurserymen to the Nursery Inspector of the Division of Plant Industry, Florida State Department of Agriculture, Gainesville, has been tabulated by the department of Agricultural Economics, Florida Agricultural Experiment Stations during each season for the past 32 seasons. Tabulations were made of the stocks used for the past seven seasons, 1953-60.

Lemon stock was used in each of these seasons and tended to increase during the period. Fifty-one percent of the movement was on lemon last season, 1959-60. See accompanying table. Sour orange was second in importance, cleopatra third and sweet seedling fourth. The proportion on cleopatra stock increased over the 5-year period of 1953-58. These four stocks made up 98 percent of the movement in 1959-60.

. . . BY . . .

ZACH SAVAGE
AGRICULTURAL ECONOMIST
AGRICULTURAL EXPT. STATIONS

There were variations in kind of stock used as to variety. In the case of Valencia oranges, 75 percent was on lemon in 1953-54, 84 percent in 1954-55 and 1958-59, 90 percent in 1955-56 and 1956-57, 82 percent in 1957-58 and 78 percent in 1959-60. The proportions of Hamlin and Parson Brown on sour orange increased in 1959-60. The proportion of Pineapple on lemon remained high last season. Surprise, Sumerfield and Dream navels were chiefly on sour orange, while Washington Navel was on sour, sweet seedling, lemon and cleopatra.

In 1953-54 there were 10 grapefruit varieties with half or more on lemon. In 1954-55 there were only three varieties in this category, but there were eight in 1955-56, nine in 1956-57, eight in 1957-58 and six in 1958-59 and 1959-60. In each season a larger proportion of all grapefruit varieties were on sour orange stock than all orange varieties, while the reverse was true in the case of lemon stock.

Of the Mandarin group, Temple oranges had a higher proportion on cleo than any other stock during six of the seven seasons. Temple had more than half on cleo in the three seasons of 1954-57, 66 percent in 1957-58, 48 percent in 1958-59, and 52 percent in 1959-60. Tangerines

(Continued on Page 17)

## STOCKS USED FOR CITRUS NURSERY STOCK MOVED TO FLORIDA DESTINATIONS
### Seven Seasons, July 1, 1953 to June 30, 1960

| Kind | Season | Rough Lemon Percent | Other Lemon** Percent | Sour Orange Percent | Sweet Seedling Percent | Trifoliata Percent | Cleopatra Percent | Grapefruit Percent | Own Percent | Mixed Percent | Total Trees |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Orange | 1959-60 | 52.8 | 1.3 | 33.1 | 3.7 | 0.1 | 7.9 | * | * | 1.1 | 1,987,184 |
| | 1958-59 | 48.5 | 15.9 | 23.1 | 4.6 | 0.1 | 7.4 | * | 0.1 | 0.3 | 2,181,893 |
| | Avg. 1953-58 | 54.9 | 15.8 | 17.0 | 4.2 | 0.3 | 7.1 | 0.1 | 0.1 | 0.5 | 1,370,551 |
| Grapefruit | 1959-60 | 45.5 | 1.1 | 45.7 | 0.6 | 0.5 | 5.9 | 0.1 | 0.5 | 0.1 | 134,885 |
| | 1958-59 | 42.8 | 9.6 | 36.4 | 0.9 | 1.0 | 7.3 | 0.1 | 0.5 | 1.4 | 102,613 |
| | Avg. 1953-58 | 41.0 | 9.4 | 31.7 | 2.1 | 3.1 | 11.8 | 0.4 | 0.2 | 0.3 | 79,662 |
| Mandarin | 1959-60 | 38.3 | 2.0 | 13.0 | 7.7 | 1.7 | 36.6 | * | * | 0.7 | 302,060 |
| | 1958-59 | 22.9 | 8.1 | 8.3 | 14.1 | 2.6 | 43.6 | 0.1 | * | 0.3 | 197,944 |
| | Avg. 1953-58 | 15.7 | 12.8 | 14.7 | 9.5 | 6.6 | 39.5 | 0.3 | 0.3 | 0.6 | 155,472 |
| Limes | 1959-60 | 81.9 | 2.4 | 3.9 | * | 0.6 | 4.3 | – | 4.7 | 2.2 | 13,858 |
| | 1958-59 | 35.7 | 4.7 | 22.0 | 30.7 | 0.2 | 0.9 | 1.1 | 4.2 | 0.5 | 39,722 |
| | Avg. 1953-58 | 65.4 | 16.4 | 2.8 | 1.5 | 0.2 | 5.3 | 0.2 | 6.1 | 2.1 | 45,126 |
| Lemons | 1959-60 | 36.5 | 1.3 | 6.9 | 0.1 | 1.5 | 8.2 | – | 44.0 | 1.5 | 20,819 |
| | 1958-59 | 61.9 | 1.9 | 11.6 | 0.1 | 1.5 | 2.9 | 0.5 | 18.3 | 1.3 | 29,762 |
| | Avg. 1953-58 | 47.3 | 16.2 | 5.4 | 7.3 | 2.2 | 6.7 | * | 14.7 | 0.2 | 34,987 |
| Tangelo | 1959-60 | 26.6 | 0.1 | 20.1 | 21.2 | 0.1 | 23.9 | – | * | 8.0 | 64,286 |
| | 1958-59 | 15.8 | 2.8 | 10.7 | 16.9 | 0.2 | 42.1 | * | * | 11.5 | 51,165 |
| | Avg. 1953-58 | 22.0 | 4.2 | 15.6 | 8.9 | 0.3 | 43.8 | 0.2 | 0.5 | 4.5 | 38,626 |
| Kumquats | 1959-60 | 28.5 | * | 3.5 | 6.2 | 39.3 | 21.7 | – | 0.2 | 0.6 | 7,542 |
| | 1958-59 | 16.0 | 1.5 | 2.7 | 2.0 | 45.5 | 24.1 | 0.1 | 5.6 | 2.5 | 5,811 |
| | Avg. 1953-58 | 18.4 | 3.2 | 7.7 | 1.4 | 52.4 | 13.8 | * | 0.1 | 3.0 | 11,688 |
| Miscellaneous | 1959-60 | 32.7 | 0.1 | 5.4 | 0.1 | 2.7 | 11.5 | – | 46.2 | 1.3 | 8,412 |
| | 1958-59 | 16.7 | 0.6 | 48.6 | 0.7 | 7.2 | 11.4 | * | 10.8 | 4.0 | 6,311 |
| | Avg. 1953-58 | 36.9 | 4.4 | 7.9 | 0.6 | 23.4 | 19.6 | * | 2.2 | 5.0 | 5,044 |
| All Citrus | 1959-60 | 50.0 | 1.3 | 30.5 | 4.4 | 0.4 | 11.7 | * | 0.6 | 1.1 | 2,539,076 |
| | 1958-59 | 45.6 | 14.4 | 22.2 | 5.7 | 0.4 | 10.7 | * | 0.4 | 0.6 | 2,615,221 |
| | Avg. 1953-58 | 49.9 | 14.9 | 16.6 | 4.7 | 1.5 | 11.1 | 0.1 | 0.5 | 0.7 | 1,741,156 |

*Less than 0.05 percent
**Most of the stock of this group was designated as "lemon" and very likely was mostly rough lemon.

# VOLCK® OIL SPRAYS FOR SCALE AND RUST MITE CONTROL ON CITRUS

## SUMMER SPRAY

**FLORIDA VOLCK Soluble Oil Spray . . . . . at 5 gals./500 gals.**
**Plus ORTHO Zineb 75 Wettable . . . . . at 5 lbs./500 gals.**

—or—

**VOLCK 90 Flowable Oil Emulsion . . . . . at 7½ gals./500 gals.**
**Plus ORTHO Zineb 75 Wettable . . . . . at 5 lbs./500 gals.**

**Florida Growers report top results with VOLCK Oil Sprays**

"Purer oil that gives excellent scale control with less chance of fruit burn or foliage damage"..."Gives better scale control than any other I've tried, and it's safer"..."Far superior to any oil I've ever used for scale control." These are just a few of the enthusiastic comments from citrus growers throughout Florida. FLORIDA VOLCK Soluble Oil Spray and VOLCK 90 Oil Emulsion represent the original phytonomic oil sprays, developed in Orlando by the ORTHO research team especially for Florida citrus. Top-quality products like these, plus all the extra benefits of the ORTHO Field Service, are yours when you buy the ORTHO Citrus Spray Program. That's why most growers prefer ORTHO.

**Best possible control of scale and rust mites, with minimum shock to trees. FLORIDA VOLCK Soluble and VOLCK 90 Oil Emulsion are highly refined oils, available in 55-gallon drums. Ask your ORTHO Fieldman for the oil best suited to your needs.**

ORTHO®

**HELPING THE WORLD GROW BETTER**

ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE.

CALIFORNIA CHEMICAL COMPANY, ORTHO DIVISION . . . . . P.O. Box 7067, Orlando, Florida

T.M.'S REG. U.S. PAT. OFF.: ORTHO, VOLCK.

The Citrus Industry
EXCLUSIVE SPECIALIZED CITRUS PUBLICATION
Issued Monthly
Representative of every interest
Representing no special interest

Publication office at Bartow, Florida. Entered as second class matter February 16, 1920, at the post office at Tampa, Florida, under act of March 3, 1879. Entered as second class matter June 19, 1933, at the post office at Bartow, Florida, under act of March 3, 1879.

# Fertilization Of Weather-Damaged Citrus Trees . . .

. . . BY . . .

PAUL F. SMITH
U.S. HORTICULTURAL FIELD STA.
ORLANDO, FLORIDA

Talk presented to the 16th Annual Gulf Coast Citrus Institute at Dade City, April 28, 1961.

Weather damage to citrus trees falls into three general categories: **wind, cold** and **water.** All of these cause a setback in tree performance to some degree and sooner or later nearly every grower is confronted with the problem of what to do for damaged trees. This is an area in which little or no research has been done to provide information. The very nature of the trouble almost makes it impossible to do a sound job of research.

How would you go about duplicating the effect of a hurricane or a freeze or a flood involving different varieties, different rootstocks, different seasons, different soil types, different spray programs, or different fertilizer and cultural practices? It would be almost impossible physically to inflict the damage that nature frequently causes.

The erratic occurrence of weather damage also makes it difficult to conduct a systematic study on factors affecting recovery of the trees. Consequently, what information we have is based on observations made following a calamity where conditions are usually highly irregular and too unsatisfactory to do a first-lass job of research.

Regardless of the lack of information, a number of helpful things can be done on the basis of an understanding of tree physiology, grower experinece, and good judgment. The fertilization and other cultural practices to follow depend upon the type of damage and the time of the year.

Let's look at some of the situations that may be involved, keeping in mind a few cardinal points about a tree.

First, the leaf is the primary mineral storage organ of the tree. A bearing-size citrus tree in good condition contains enough minerals to carry it about a year with no additional uptake. The first deficiency to develop usually will be nitrogen. Fertilizers do not stimulate growth; they may permit growth to take place, but do not cause it. The same is true of water.

Carbohydrates, hormones and other organic substances manufactured by the plant have primary control over the ability of the tree to grow. This control is a primary function of the leaves. Ample minerals, water and favorable temperature conditions permit growth to go on if the tree is otherwise ready to grow.

### Wind Damage

Now let's consider damage from strong wind. If the effect of the wind is primarily that of shaking off the fruit, which may occur if the crop is nearly mature, there is little or no damage to the tree and consequently no change in the fertilizer schedule is called for.

If, on the other hand, considerable defoliation results, minerals are thereby removed from the trees. The loss of leaves will automatically trigger new growth during any season of the year. The tree needs fertilizer (primarily N) to strengthen this new growth. Therefore, if the tree was fed within one or two months ahead of defoliation it is fortunate, because nothing need be done immediately.

If the tree had not been recently fertilized, it should be fed immediately and preferably at a reduced rate. During the year following defoliation, the tree should not receive more than a normal total amount for that period. A shift in timing is the

main adjustment necessary. This will either be the moving up of the time of the next feeding or the working in of an extra feeding without increasing the yearly poundage.

For instance, a September defoliation on a grove being fed three times a year would call for advancing the usual fall feeding to September. On a two-feeding-a-year program, it would be well to divide the fertilizer into three feedings for one year only. Or a quick application of N can be used and the regular fall fertilization reduced in amount. (see Table 1).

### Cold Damage

If the only appreciable loss is the fruit, no change in culture is called for. Since fruit freezes at a higher temperature than leaves, this is not an unusual event. If some defoliation (up to 20 or 25 per cent) results from cold, but not enough to cause bud break, I would not suggest any change in normal practice.

If heavy defoliation and some twig damage occurs and new growth starts, the decision as to what should be done can be difficult to make. Here are some of the possibilities:

1. If the grove was recently fertilized, do not apply more fertilizer, not even N.

2. If next feeding would normally be 4 to 6 weeks off, on a three-time program, it can be moved up somewhat but the sense of urgency here is less critical than in the case of wind defoliation due to the different season of the year. New growth will come out slow in cool weather.

3. On a two-time program where the freeze was in December or January and the next feeding scheduled for April, either a light N top dresser can be added or half of the April feeding can be moved up.

**Regardless of method followed, no increase in fertilizer for the year following damage is called for.**

If the cold damage is drastic, that is, killing small or large limbs so that cutting back to live wood is necessary, the normal plan of fertilization should be changed radically.

1. If the trees were fertilized recently, do nothing until after the first flush of growth has matured. Then feed lightly several times during the next year, using much less than a normal supply of fertilizer for the year. Frequently nitrogen alone can be used for most of the feedings during the recovery period. As the tree regains bearing capacity, it can be gradually returned to mixed fertilizer, but the amounts should be in accordance with the new bearing capacity. It may require 2, 3, or 4 years to regain the original condition, and the amount of fertilizer during this period should be well below normal, not above.

2. If the trees were not recently fed, apply a light fertilization (preferably N alone) in time to strengthen the first flush of growth; then continue as just outlined.

### Water Damage

In discussing water damage, no consideration is given to those cases where poor drainage is a chronic problem. Many groves on flat land may have no serious water problem for many years, then in a period of exceedingly high rainfall be temporarily water-logged.

There are also special cases near lakes or marshland that are normally all right. Or, a grove that is equipped for drainage may have an occasional inundation for one reason or another. Some changes in fertilization are usually desirable following temporary water damage. Careful management can often save such trees and return them to production much quicker than growing replacements.

Mild to moderate root damage may result from excess moisture and this causes the tree to be unthrifty, with little defoliation but a tendency to wilt easily. No change in practice is absolutely necessary, in such cases, but it may help to reduce the rate and increase the frequency of fertilizer application during recovery. Above all, water should be supplied in times of stress.

Where water damage, which is really a drowning or suffocation of roots by shutting off their oxygen supply, is more severe, considerable defoliation and a weak tree results. Reduce amount of fertilizer both per application and the total per year during recovery period. Several light fertilizations per year are in order. If trees are pale and do not respond to fertilizer, urea sprays (7-8 lb. per 100 gal.) every few weeks may help revive them. Also, light feedings of straight nitrogen can be used instead of mixed fertilizer for many of the feedings during the recovery period.

Very heavy defoliation plus dieback of twigs or branches may follow severe water damage to the roots. This indicates that most of the root system is dead and a new one must grow

(Continued on page 9)

TABLE 1

## SUGGESTIONS FOR FERTILIZING BEARING CITRUS TREES THAT ARE WEATHER DAMAGED

| Type of Damage | Timing of Fertilizer | Rate of Fertilizer | Nitrogen only |
|---|---|---|---|
| **WIND DAMAGE** | | | |
| a. Loss of fruit | No change | No change | - - - - |
| b. Loss of foliage | If 3 times, move up[1] | No yearly change | Possibly |
| | If 2 times, don't change[1] | No yearly change | Yes, soon |
| **COLD DAMAGE** | | | |
| a. Loss of fruit | No change | No change | - - - - |
| b. Slight defoliation | No change | No change | - - - - |
| c. Heavy defoliation (50% or more) | If 3 times, move up | No yearly change | Possibly |
| | If 2 times, don't change | No yearly change | Yes, soon |
| d. Wood killing[2] | | Reduce | Possibly |
| | If 3 times, no change | Reduce | Yes, soon |
| | If 2 times, no change | | |
| **WATER DAMAGE[3]** | | | |
| a. Trees unthrifty | Increase No. of applications | No change in yearly rate | - - - - |
| b. Some defoliation, trees weak. | Increase No. of applications | Reduce yearly rate | Possibly[5] |
| c. Heavy defoliation[4] | Increase No. of applications; but delay first application | Reduce yearly rate | Possibly[5] |
| d. Severe defoliation plus dieback[4] | Increase No. of applications; but delay first application until recovery starts | Greatly reduce yearly rate | Possibly[5] |

1 Refers to growers' fertilizer practice of two or three applications per year; Move up applies only to the next scheduled application.

2 Trees severely cut back may require only nitrogen for the first 1 or 2 years. When bearing resumes, resume mixed fertilizer in proportion to new capacity.

3 Suggestions not intended as a remedy for chronic poor drainage but apply to cases of infrequent damage where root recovery is possible.

4 Some degree of pruning and white-washing exposed trunks may hasten recovery by helping restore root-top balance and reducing sun damage.

5 Urea foliage sprays may be beneficial if foliage is pale; or straight nitrogen may be used instead of mixed fertilizers in some applications. Low biuret (LB) urea should be used at 7 or 8 lb./100 gallons.

# How Nematodes Get Around

. . . BY . . .

DR. W. G. COWPERTHWAITE

At South Florida Citrus Institute, May 31, 1961

About six years ago, the Division of Plant Industry, then known as the State Plant Board, began a fight to eradicate the burrowing nematode and thereby eliminate spreading decline disease from Florida's commercial citrus. This was only a short time after the Citrus Experiment Station at Lake Alfred had discovered that the burrowing nematode was responsible for the declining condition that had been apparent in some citrus groves for almost two decades.

The push-and-treat program has eliminated approximately 5,000 acres of decline-diseased citrus trees to date. In May the Division pushed an additional 100 acres in an area clean-up program.

When the Division first began pushing out declining citrus trees and treating the soil with a fumigant, estimates fixed the total number of decline-infested citrus at 5,000 acres. That should have been enough to clean up the pestilance altogether. But it wasn't.

The nematode was spreading as fast or faster than the Division could move its equipment over the various hurdles set up by court appeals and orders.

That is surprising in view of the fact that the Citrus Experiment Station and other groups have determined that the burrowing nematode moves an average of 35 feet a year by natural means. When first noted about 20 years earlier, the declining condition was apparent in only one area in Polk County. In 20 years, this tiny pest could never have covered 5,000 acres on its own. Nor could it have continued later to register gains in the face of the Division eradication program which appeared to be mopping up decline in Florida.

In reality, the nematode was receiving help from outside. A lot of work went into the study of this problem of ever-increasing spread and out of it came the disclosure that the pest was being moved in a variety of ways, assisted materially by man. Unwittingly, growers were sabotaging their own groves and efforts by carting the nematode into new areas, principally through the movement of infested citrus plants and trees. Other nematodes made the trip through the movement of soil from infested spots.

Some growers with decline in their groves weren't particularly interested in doing anything about the problem, especially in the light of exceptionally good returns for fruit. On the other hand, adjacent growers, yet uninfested, were all for anything that would keep burrowing nematodes out of their groves.

The killing freeze in 1957-58 and freeze after-effects and hurrince damage in successive seasons have set up a tremendous demand for Florida citrus. Decline trees hardly would be disposed of as long as the fruit from those trees was bringing a profit.

Now there is talk that dry weather this spring has dealt another blow to next year's crop. This should mean another fine market for Florida citrus. But at this same time, drouth can probably do more than any other factor to make decline evident in a grove.

There should be some explanation for this recent upsurge of interest in pushing nad treating. I think that failure thus far of any agency to come up with a sure cure for decline is responsible for some of the interest, and the end of the Valencia orange marketing season is an opportune time to push out infested trees.

The May total of about 100 acres pushed marks the highest such figure in almost two years. This has all been done on a voluntary basis, with no compensation involved.

While the push-and-treat program was fighting the burrowing nematode in the field and in the courts, the pestilence was making new gains. As an example of how the nematode was infiltrating the citrus belt, Division records show that shipments of nursery stock from one nursery where the nematode was found resulted in 29 new infestations of spreading decline.

Only this month the Division traced the appearance of decline in a large citrus grove ot stock produced in a Lake County nursery before the Division entered the burrowing nematode program. Eleven samples were taken by the United States Department of Agriculture from the nursery site, which is now in young grove. Heavy populations of burrowing nematode were found in every sample. The Division is now attempting to track down all other shipments of stock from that particular site.

The above examples illustrate what was going on at the time the Division was wiping out 5,000 acres of decline and turning up an additional 5,000 infested acres.

Fortunately, in the five-year-period the Division has worked out the principles of a program that promised much toward retarding the movement of the burrowing nematode. One of the best ideas was to crack down upon the movement of infested nursery stock. This meant that no one was to sell or even give away known decline-infested trees.

Another brainchild was the program of site approval for citrus nursery planting, a plan that has done much to retard the movement of the burrowing nematode. Nursery stock can not be planted near known infestations of spreading decline, whether present in groves or dooryards.

Some growers have expressed concern over the movement of soil and uprooted trees involved in the construction of new roads or the reconditioning of old roads in Florda. State and county road departments remove soil and trees from rights of way in a never-ending operation. The mere sight of huge earth-moving rigs charging around the scene with loads of sand clay is sufficient to cause hysteria among any growers acquainted with the burrowing nematode and spreading decline. And the same sort of feeling is certain to follow a glimpse of trees being pushed over and dragged away to a burning spot in another area.

Actually, with a few exceptions which were nothing more than honest errors, there has been little to worry about in these situations. State and county road departments have worked with the Division's Winter Haven office in close harmony in the past and can be expected to continue that spirit of cooperation.

The routine in these instances is simple. Division inspectors are sent out at once to check the areas where such operations are planned. This is to determine where the rights of way extend in regard to areas where spreading decline might be present. If there is no record or other evidence of the disease, the road-building proceeds as planned, with soil and trees being moved without restrictions. In the event there is decline in the neighborhood, then specific plans are made and followed by the road departments. Soil and trees are not moved from properties

# Governor Appoints Members Of Florida Citrus Commission

Seated, left to right: Key Scales, Jr., Weirsdale; Sam A. Banks, Lakeland; Paul Robertson, Vero Beach. Standing, left to right: C. D. Newbern, Tampa; Kingswood Sprott, Lake Wales; Robert Snively, Winter Haven.

where decline has been found and in no event are these materials to be carted across clean areas.

Any soil moved from a suspicious area must first be treated by the Division. Trees from an infested property must be burned on the spot, or the path along which the trees are moved must be treated with an approved soil fumigant. No stone is left unturned in calling a halt on the movement of the burrowing nematode and spreading decline in these cases.

Recently a grower called the Winter Haven office with the information that the road department was moving fill to a right of way. The Division checked the report and learned that such activity was not scheduled, at least not according to our records. Actually, the job had been completed previously, but heavy rains had washed away a lot of the right of way and fill was needed to repair the damage. The road department had sent in machines to move the soil back in place.

There was one difficulty in this instance, however. The soil had washed quite far from the right of way, winding up in ditches beside an infested grove. That meant that in returning the soil, the machines also had moved soil from the vicinity of an infested property. The Division treated the right of way and the path along which the soil was moved to destroy any nematodes that might have gotten beyond the infested grove.

Soil or clay can not be moved from a borrow pit without the road department notifying the Winter Haven office and a check being made of the pit. Earth-moving rigs are cleaned if there is a case history of nematodes in the area. Cleaning is not considered necessary if no nematodes are present.

With all these precautions, the Division still needs the cooperation of everyone in the citrus industry. Despite apparent gains in the past, the burrowing nematode continues to make advances and will as long as man is willing to lend a helping hand.

To illustrate this point, survey teams of the Division and of the United States Department of Agriculture have uncovered 42 new positive nematode infestations since January 1, 1961.

Of these properties, 23 had become infested through the movement of the nematode by natural means—from an adjoining infested grove in most instances. Five had contracted the disease from dooryard plantings of ornamentals and other hosts of the nematode. One was not determined, but the remaining 13 infestations were traced to resets.

For the record, the Division defines a reset as any tree placed in a grove at any date following the original planting. A reset replaces one of the originally planted trees that is removed for any reason.

The sudden appearance of spreading decline in an otherwise healthy grove has been a problem for many years. At least, it has been a problem until questionning uncovers the fact that a tree has been brought in to replace one that has gone out of production. Growers many times will deny that the replacement is a reset, believing that resets can only be young plants obtained from a nursery. Regardless of its origin, the reset can and does in many instances bring decline into an otherwise clean grove.

Division records reveal the fact that approximately 90 per cent of all new infestations of spreading decline in the state are the results of resets. Little wonder that decline can spread so quickly and is continuing to spread despite warnings to growers that they should insist that resets have a clean bill of health. The best insurance possible is that the resets be certified as nematode-free by the Division's plant inspector.

As of March 1 of this year, agents of the Division and of the United States Department of Agriculture had found 1,350 properties which

could be called initial positives. Of this number, 668 have been treated. This is about halfway to successful control of the burrowing nematode and spreading decline in commercial citrus areas.

By way of concluding, I would like to say that as far as is known, little infested nursery stock is being moved today. Infested stock being moved is in violation of every effort the Division has made or is making to halt decline. Actually, there is only one way this movement can be stopped completely and that is with the cooperation of growers. If growers refuse to accept uncertified citrus plants or trees, there will be no market whatsoever for the dealer who has no qualms about selling diseased material wherever and whenever he can. After all, the unhealthy stock he unloads will never return to haunt the dealer. The grower, on the other hand, must live with the decline trees as long as they live. This can be a long and unprofitable relationship.

I'm sure no one here today can be classed in the group that would knowingly buy and plant decline-infested plants or trees. But there are thousands of other growers not present today and some of them might yield to the urge to purchase inexpensive stock at somewhat reduced prices and with no certification. It is important to you that not only you but your neighbors deal in nothing but clean citrus stock.

Spreading decline is a problem that requires cooperation on a neighborhood basis. It is very important that neighbors look out for one another. I don't think any of you would want your citrus trees to fall victim of spreading decline that can and will move in from a neighboring grove. No more so than your neighbor would want to acquire decline from your trees.

The Division of Plant Industry hopes to obtain sufficient funds in the 1961-63 biennium to continue the burrowing nematode program. The Division will need continuing cooperation in this program, especially from those growers who have decline in their groves.

Florida's citrus growers cannot afford to live with the burrowing nematode and spreading decline. Let's all do what we can to stop it in its tracks now, with high hopes of ridding commercial citrus areas completely of this pestilence in the future.

---

Advertisers in The Citrus Industry receive big dividends.

## FERTILIZATION OF WEATHER-DAMAGED CITRUS TREES

(Continued from page 6)

if the tree is to survive. Fertilizer rate should be greatly reduced and frequent light applications of N or mixed fertilizer used.

Water relations are very important and the trees probably need some degree of cutting back to help balance top and root. If trunk and main branches are exposed to sun, they should be protected with whitewash. Watering is a must in periods of stress just as one would care for a newly-transplanted tree. When some foliage returns, it may be well to spray with urea if it is unduly pale in color.

### Summary

I have tried to give a general outline for handling weather-damaged trees. I would like to emphasize that in no case have I suggesaed increasing the amount of fertilizer. This, I feel, is the most common mistake made by growers and results in killing or further weakening trees. A damaged or weakened tree equires, as a rule, less fertilizer but more frequent feedings during the recovery period.

Increasing the amount of fertilizer is about like stepping on the gas after a tire blows out. Either may not be disastrous, but neither is wise. In the case of temporary water damage, the biggest mistake, in my opinion, is waiting too long to do anything. Drainage is, of course, the first step and this is usually done; then the grower may make an extra-heavy fertilizer application and sit back hoping everything is all right. Instead, he should immediately start making plans to provide water during the period when the trees should be growing a new root system.

If the trees wilt even when watered during warm, dry periods, and show signs of collapsing, pruning off part of the foliage to relieve further the water stress should be step number two. Fertilization is unimportant until these hurdles are past. If the trees begin to show recovery by putting out new roots or foliage, then light fertilization can be resumed.

---

Dr. P. H. Senn, head of the agronomy department of the University of Florida College of Agriculture in Gainesville for the past 22 years, will retire June 30.


# SEEING IS BELIEVING

COVER CROPS AND PASTURE GRASSES
WITH EYECATCHING VIGOR AND COLOR

YOU OWE YOURSELF THE OPPORTUNITY
AND YOUR LAND'S GOOD HEALTH

**TRY** **COMPARE**

## FAIRFIELD AGRICULTURAL SLAG

THE SUPERIOR LIMING PRODUCT AND
SECONDARY FERTILIZER

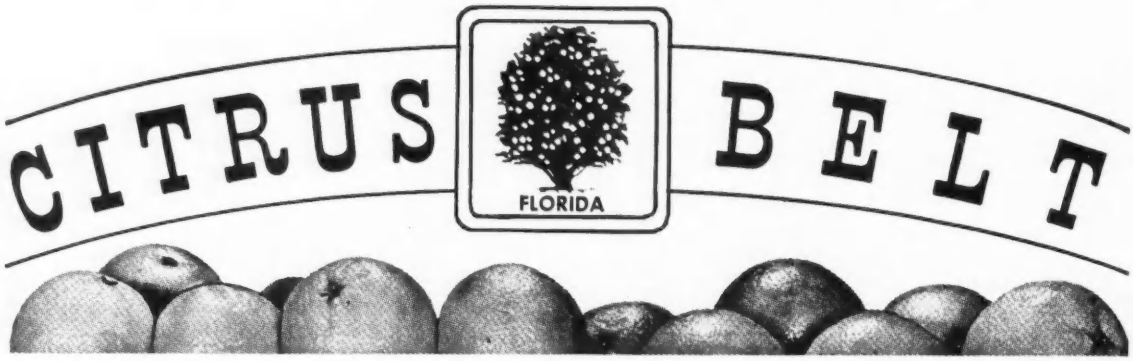
CONTACT YOUR FERTILIZER DEALER
OR

## FAIRFIELD OF FLORIDA AGRICULTURAL SLAG CORP.

**Plant**
**Davenport**
**Phone Haines City**
**HA 2-1788**

**Office**
**Lake Alfred**
**Phone Winter Haven**
**FR 2-1560**

# SHORT PICKINGS FROM AROUND THE CITRUS BELT




A recent bulletin contributed by the Citrus Experiment Station at Lake Alfred and compiled by Harry W. Ford, Associate Horticulturist of the Citrus Experiment Station, includes a list of species, varieties and relatives in 70 citrus collections, including a detailed list of various types of oranges, lemons, limes, grapefruit and various hybrid specimens. The list includes species of various specimens propagated in the United States and in virtually every other area in the world where citrus is produced.

* * *

Warren O. Johnson, head of the Federal State Frost Warning service of Lakeland has issued a statement in which he says that the use of Polyethylene as a covering for greenhouses has been on the increase in Florida and presented considerable detailed figures on the effect of changing temperatures on buildings so insulated. These data indicate the use of Polyethylene as a covering for greenhouses as very effective in increasing the daytime heat budget, and indicated that the freeze hazard decreased as nocturnal temperatures were lower in plastic houses on all nights except when there was rain or low overcast.

* * *

Recent elections to the Florida Citrus Mutual's 21-man Board of directors resulted in the reelection of 18 directors by growers' balloting in May and early June. Three new directors, Herbert S. Massey of Dade City, W. Elton Clemmons of Ocala and Chester J. Karst of Orlando, were added to the directorate. The 18 holdover directors are: Henry A. Prine, Palmetto; Fred W. Moody, Palm Harbor; William R. McMullen, Tampa; Fred H. Adkinson, Minneola; Vernon L. Conner, Mt. Dora; W. Max Acree, DeLand; B. F. Wheeler, Jr., Oviedo; Charles C. Partin, Kissimmee; L. W. Tilden, Winter Garden; Robert J. Barben, Avon Park; John Parker, Arcadia; Albert Carlton, Wauchula; James C. Morton, Auburndale; Tom O. Brown, Frostproof; Clayton Logan, Lakeland; J. J. Parrish, Jr., Titusville; A. B. Michael, Wabasso; and Alexander Ryburn, Vero Beach.

* * *

At Florida Citrus Mutual's 13th annual membership dinner, held in Winter Haven on June 20, more than 1500 lbs. of steak, 3500 baked potatoes, 6000 baby dill pickles, 6000 stuffed olives, more than 300 lbs. of tossed salad, with enough rolls to go around, were served to the some 3000 members in attendance at the dinner.

* * *

Dr. A. K. Burditt, entomlogist-in-charge of the USDA Citrus Insects investigation, indicated that experiments involved atomic radiation as a defense against citrus pests may soon be put into practice. His statement was made before the 8th Annual South Florida Citrus Institute at Lake Placid recently.

* * *

Gov. Farris Bryant has directed the new members of the Citrus Commission to create an advertising campaign designed to make everyone think of Florida when they see an orange.

* * *

Martin E. Hearn, director of Florida Citrus Mutual's international trade division, reported that on his recent trip to Paris, the French people were most enthusiastic over the canned juice which many of them saw and tasted for the first time during his trip. Hearn voiced the hope that present strict French quotas on U. S. citrus products may be lessened as a result of this general acceptance.

* * *

Robert H. Webb, Winter Haven citrus grower, has been elected president and treasurer of the Dundee Citrus Growers Association. Webb succeeds John L. Olson, who served as president for nearly 25 years prior to his death last January.

* * *

W. C. Pedersen, president of the Florida Citrus Canners Cooperative, recently announced that his group has received a 30 year extension for the use of the "Donald Duck" brand name on citrus products. The new agreement was signed with Walt Disney Productions. General Manager Marvin H. Walker indicated that the cooperative plans to promote its brand products to a much greater degree than in the past.

* * *

Robert W. Rutledge, Mutual's executive vice president, states that the current citrus season is practically closed and that "only a relative small amount of the estimated total of 87.5 million boxes of Florida oranges and 31 million boxes of grapefruit still remains unsold".

* * *

Secretary of Agriculture Orville L. Freeman has announced the appointment of S. R. Smith as Acting Administrator of the agricultural marketing service of the U. S. Department of Agriculture. Mr. Smith moves up to the new post after 15 years as director of USDA fruit and vegetable marketing activities. He succeeds O. V. Wells, who retired as AMS Administrator on May 31 to go with the food and agriculture organization of the United Nations as assistant Director-General, in charge of the Economics Department. Mr. Wells will be at the FAO headquarters in Rome. Mr. Smith has been in USDA service for 27 years, joining the Department in 1934 as an agricultural economist specializing in price analysis on fruit and other crops.

* * *

More than 11,000 visitors from all 50 states and some 30 foreign countries toured Minute Maid Company's

**(Continued on next page)**

# Bond Requirements For Agricultural Dealers To Be Tightened

Commissioner of Agriculture Doyle Conner has stated when current licenses expire in July he will tighten bond requirements for dealers in agricultural products to protect the Florida farmer.

Conner said he plans to raise the maximum amount of bonds from $10,000 to $20,000, and scrutinize very closely the amount of business done by a dealer before letting him get by with a small bond which may be inadequate.

"This does not mean that every dealer will have to post a $20,000 bond," Conner said. "This is just a maximum. We will determine how much bond each dealer needs individually. Amount of the bond will be based on one-half of the dealer's best month's business as it has been in the past. The $20,000 will simply be the maximum.

He said the increased maximum was needed because of inflationary prices and bad experiences with inadequate bonds during the past year. Dealers must post the bond with the Department of Agriculture before they can secure a license to operate. During the past fiscal year the Department issued 1815 licenses and recovered $105,000 for Florida farmers.

The Commissioner quoted several "bad experiences" at random:

"Last year four farmers in the Plant City area filed a $24,000 claim against a dealer for vegetables they sold him and did not receive pay. The dealer's bond was $7,500 so the farmers received 31 cents on the dollar.

"Another claim was filed against an egg dealer in Central Florida by seven farmers. His bond was $10,000 but he owed the farmers $21,000 so they collected 47 percent. These were both Florida dealers but there are many cases where out-of-state dealers are involved. For instance, an out-of-state livestock dealer owed two Florida farmers $20,000 for livestock. His $10,000 bond paid off 50 cents on the dollar.

"These are not just isolated cases," Conner added, "We have many of them."

The 1961 Florida Legislature also did some tightening on the License and Bond Law, enforced by the Department of Agriculture. It amended the law to set a six months time limit on filing claims and made licenses renewable on their anniversary date instead of July 1. It also included a section forbidding a dealer to consign his consignment to another dealer and charge the farmer a double commission.

## SHORT PICKINGS FROM AROUND THE CITRUS BELT

(Continued from preceding page)

three processing plants during the tour season just ended. The final count was 11,042 as compared with 11,630 during the 1960 tour season, a decrease of approximately five percent attributed to the general business inactivity which kept many people closer to home this year.

* * *

Phil C. Peters of Winter Garden has been re-elected president and chairman of the board of the Florida Citrus Exchange during the 51st annual meeting of this large fresh fruit sales agency. Peters served his first term as a director of the Exchange in 1918, and has been president since 1956.

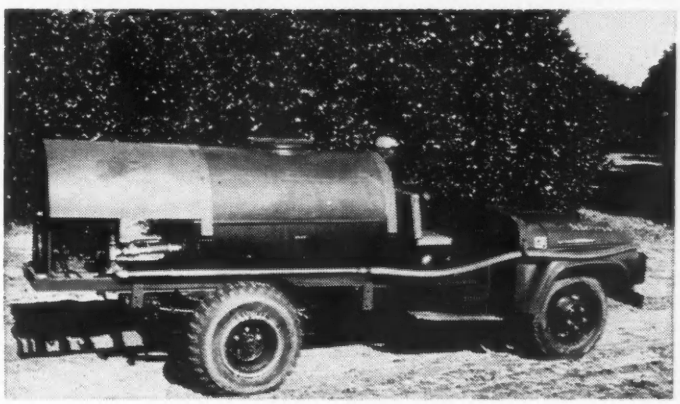
John T. Lesley, general manager of the Exchange since 1950, was also renamed to his position as executive head of the organization. He re-appointed all key departmental executives of the Exchange to serve during the 1961-62 season.

* * *

H. H. Willis, Sr., of Fort Pierce has been re-elected to the presidency of the Growers Loan and Guaranty Company, a production lending facility affiliated with the Florida Citrus Exchange. Also re-elected to serve with Willis is James Samson of Tampa, executive vice president; and Counts Johnson, secretary. Willis has been president of the Growers Loan and Guaranty Company since last February when he was elected to serve out the term of John E. Olson, deceased.

Florida's Finest Citrus Trees
Select Breeding...
...Vigilant Care
Adams
CITRUS NURSERY
*See Our Classified Ad*
Winter Haven, Florida

FIBER GLASS SUPPLY TANKS



- STRONG AND DURABLE
- NO MAINTENANCE COSTS
- NO RUST CLOGGED NOZZLES
- BUILT TO LAST A LIFETIME
- REASONABLY PRICED
- BUILT IN COLOR
- IDEAL FOR LIQUID FERTILIZER
- FACTORY GUARANTEED 10 YEARS

Manufactured & Sold By
HURRICANE FIBER GLASS PRODUCTS CO.
Recker Highway — Auburndale, Florida
Tel. WO 7-1688
Also — Boats — Air Boats — Jeep Tops — Industrial Fiber Glassing

# What Is The Value Of A Citrus Tree And When Should It Be Removed?

. . . BY . . .
ZACH SAVAGE
AGRICULTURAL ECONOMIST
AGRICULTURAL EXP. STATIONS

Talk delivered at South Florida Citrus Institute, May 31.

Most citrus trees are used for fruit producing purposes. A few are used in landscapes and border plantings but even for these purposes, fruit production is desired also. Our concern here is for trees to produce fruit commercially. A citrus tree that does not more than pay for its keep has no value as an income producer. If a tree looks good and appears healthy it might conceivably have value as an ornamental or some value for sale to a grove buyer. However, only a few trees that are low producers of fruit scattered throughout a grove will materially lower the fruit yield and the sale value of the grove. Low yielding trees are often good specimens of plant growth and look good but fail in producing ample quantities of fruit.

Fruit prices are important in the determination of the profitableness of a tree. A tree might not be profitable with fruit at a dollar per box but might be profitable with fruit at $2.00.

If production costs are $210.00 per acre of 70 trees, the cost is $3.00 per tree. Three boxes of fruit at $1.00 would return production cost for the tree with nothing left for profit. With fruit at $2.00 a net of $3.00 per tree would be realized. At this cost and fruit at $1.00, less than 3 boxes per tree would mean a loss on such trees.

Some groves have some trees not paying for their keep and a majority of trees that more than pay for their keep. With costs at $3.00 per tree and $210.00 per acre, 10 trees yielding 2 boxes per tree and 60 trees yielding 4 boxes per tree, the acre would net $50.00 with fruit at $1.00 per box. This would mean 10 trees had a loss of $1.00 per tree and 60 trees netted $1.00 per tree or a net of $50.00 per acre. The same acre with $2.00 fruit would net $310.00 and no trees operating at a loss. The 10 low yielding trees would net $10.00 and 60 trees yielding 240 boxes would net $300.00 or $40.00 less than would be the case if all trees yielded 4 boxes per tree. The net per tree would be $1.00 and $5.00 respectively.

Other examples might be given. It is a matter of simple calculations. Determine the yields, obtain gross income, deduct costs for the net. In checking on individual trees a tree chart for the grove is almost a necessity. Seldom should a tree be removed on the basis of results for only one season. Questionable trees should be noted and yields recorded for several seasons. If a tree consistently does not return expenses, it should be replaced with the best tree available. Do not take chances by replacing trees with nurserystock of questionable productiveness or that are not as free from diseases and viruses as it is possible to obtain.

The purchase price of the tree itself is very nominal and comes only once in the life time of the tree. When compared with costs after setting, the purchase price of the tree is the least expensive of any other costs. Nurserystock may be purchased at the present time for around $1.00 each and up. The exact cost varies with size, variety, rootstock, etc. For an example let us assume a price of $2.00 for as good trees as can be purchased at the present time. The cost of the land at $500.00 per acre on which to set this tree would amount to $7.14. To plant and care for the tree through the first year would take $10.26 in addition to the $2.00 for the tree. To care for this tree through the first 5 years would cost $15.75 plus $2.00 for the tree, or a total of $17.75. At this price the nursery stock cost is 11 percent of the total cost through 5 seasons. Nursery stock at $1.00 would amount to 6 percent of the total cost through 5 seasons.

The productive life of a good disease-free tree is long, much longer than the average life of trees of this State at the present time. When this long productive life of the tree is considered, the cost of the nursery stock is very small indeed. However, the mere fact of a high purchase price for a tree does not guarantee a good tree. Value commensurate with cost should be in the tree. It is the job of the buyer to see that this is the case. The best tree that can be produced should be priced accordingly and the best tree would be the best buy for fruit production regardless of purchase price.

Some nursery stock is never worth its purchase price and/or up-keep. Poor trees are the most expensive and should never be bought and set in the first place. Use only the best obtainable as such are the least expensive in the long run even though the initial cost might be many times the cost of an ordinary tree.

Vacancies can also be a source of loss or decrease in profits. In the case of $1.00 fruit, yield of 4 boxes per tree it would require 53 trees to pay cost of $210.00 per acre. This would mean a profit of $70.00 for the acre. However, with 5 vacancies or nonproducing trees the net would be only $50.00 on the acre of 70 trees and/or spaces. Only vigorous trees of best strain and proven quality should be maintained in the grove with no vacancies or unprofitable trees.

Extra costs for treating sick and diseased trees should be charged against such trees. A treatment costing $1.00 per tree would raise the cost to $4.00 per tree with operating costs at $3.00. With 10 sick trees on an acre the cost would be $220.00 or 220 boxes of $1.00 fruit. This would reduce the net by $10.00 additional for sick trees.

The worth or value of a tree is determined by the net realized. A tree yielding 5 boxes of $1.00 fruit at a cost of $3.00 per tree would be worth $33.33 if capitalized at 6 percent. This would amount to $2,333.00 per acre of 70 trees. Under identical conditions except with fruit at $2.00, the value would be $8,167.00 per acre. Trees returning a net of zero or less have no earnings value.

Trees on the border line as to yield that are decreasing season by season should be removed and replaced. Need for replacement may come at any age of tree. Some individual trees never pay for their keep at any age and have no value at any time.

**A few additional points well worth considering are:**

1. **Keep a good grove record and it will keep you.**
2. **Make and put into operation a plan for each grove unit for the**

**(Continued on next page)**

# Florida Fruit and Vegetable Association To Hold Annual Meeting In September

The interdependence of all phases of agriculture and industry in the national and state economy will be the foundation for the theme "Your Friends and Ours", to be the highlight of the 18th Annual Convention of Florida Fruit & Vegetable Association in Miami Beach, September 27-29, announces J. Abney Cox, Princeton, general chairman of the organization's convention committee.

This convention is expected to have a record-breaking attendance as well as a comprehensive program covering all phases of Florida agriculture, Cox stated.

The convention theme, "Your Friends and Ours", will stress the fact that both agriculture and industry are dependent upon the general economic welfare of the nation and state and that both factors have to work together for the common good and that the prosperity of each is so closely tied in with the other that there must be a unified effort to make sure that industry management and labor and farmers, no matter what commodity they grow, make a reasonable return on their work, investments and efforts, Cox added.

One of the largest representations at the FFVA Convention will be from the citrus industry whose leaders realize that every segment of agriculture must work together, the chairman also commented.

Florida Citrus Commission will cooperate in staging a breakfast for the convention registrants and guests from all over the nation and several foreign countries.

## AMENDMENT TO MINIMUM WAGE LAW SAID TO BE HELPFUL TO FLORIDA WORKERS

A Florida-originated amendment to the Administration-backed minimum wage bill will have the real effect of permitting workers in the food packing and processing industries to work more and to earn more and will provide for more employment opportunity, Joffre David, General Manager of the Florida Fruit and Vegetable Association said recently.

The amendment, backed by FFVA and introduced by Senator Cooper (D-Ky) and co-sponsored by Florida's Senator Holland eliminated a provision in the minimum wage bill which would have reduced overtime exemptions for fruit and vegetable packers and processors from 28 weeks per year to 20 weeks.

David credited Kenneth R. Morefield, FFVA's Washington Legislative Representative, with much of the success in having the amendment adopted. Morefield, who testified before the Senate Labor Committee in Washington earlier this year concerning minimum wage legislation, worked closely with national agricultural organizations in presenting agriculture's case.

The bill also provides an increase in the minimum wage for presently covered employees from the present rate of $1.00 per hour to a new rate of $1.15 per hour. The minimum rate for newly covered employees is $1.00 per hour, becoming effective 120 days after the president signs the bill.

## WHAT IS THE VALUE OF A CITRUS TREE AND WHEN SHOULD IT BE REMOVED?

(Continued from preceding page)

season. Remake and operate plans each succeeding season.

3. Estimate income and expenses—plan accordingly.
4. Pencil pushing involves considerable effort and hard work but could be biggest profit maker if done correctly.
5. Time spent working out a grove plan for the season may be the most rewarding of time spent at any other grove job.
6. Include a good tree chart in grove plans. Indicate trees needing special attention and trees that should be replaced. It pays to maintain a full stand of vigorous trees of best strain and proven quality.
7. Management is now the critical factor in successful grove operation. This means a highly specialized kind of management where records are extremely valuable.
8. Profitable decisions are more likely to result from well conceived planning on paper, backed by sound facts and figures, than from the too common, haphazard, off-the-cuff method.
9. In cattle business, nonproducing cows are eliminated. Unprofitable citrus trees should be eliminated, also.

Superior
FERTILIZER AND CHEMICAL COMPANY
PRODUCERS OF SCIENTIFICALLY CONTROLLED
PESTICIDES
AND FERTILIZERS * * *
A COMPLETE LINE OF SPRAYS AND DUSTS
SULPHOR — WETTABLE, DUSTING, SOIL
ETHION
ZINEB
PARATHION
WEED KILLERS
OIL
NUTRITIONAL SPRAYS
Superior Sally says:
Remember, Mr. Citrus Grower—the failure to control rust mites last summer with ZINEB was a result of poor coverage, particularly so where high rust mite populations existed.
TAMPA • P.O. Box 1021, Ph. 4-4131
FORT PIERCE • P.O. Box 246, Ph. HOward 1-2230

# Tentative Program

## 28th Annual Camp McQuarrie Citrus Institute

## August 7-11, 1961

The 28th Annual Citrus Growers Institute will be held at Camp McQuarrie Monday to Friday, August 7-11, Lake County Agent R. E. Norris has announced.

All members of the citrus family are invited to attend the institute where a program of instruction, inspiration and recreation has been developed.

Camp McQuarrie is located in the northern part of Lake County in the Ocala National Forest. Sleeping facilities for citrus growers and their families are available in the cabins, without charge, as long as they last on the basis of the order in which reservations are received. Separate cottages are provided for men and women. Meals are provided at the camp at reasonable prices.

Reservations for the Institute should be made with R. E. Norris, County Agricultural Agent, Tavares, Florida.

Here is the program:

*MONDAY, AUGUST 7*

2:00 - 6:00 PM Registration — Florida Citrus Mutual Information Trailer
Mrs. Adeline Norris, Registrar

6:15 PM Supper — Mess Hall

8:00 PM Assembly — Auditorium
G. T. Huggins, in Charge
Assisted by Morris Anderson and His accordion

*TUESDAY, AUGUST 8*
K. S. McMullen, in Charge

7:15 AM Breakfast — Mess Hall

8:45 AM Morning Session — Auditorium

ANNOUNCEMENTS
R. E. Norris, Lake County Agricultural Agent, Presiding

Invocation — Fred N. Paddock, Rector — Holy Trinity Episcopal Church, Fruitland Park

Welcome — Karl Lehmann, Secretary, Lake County Chamber of Commerce

THE GRAPEFRUIT PROBLEM

"*How We Raise and Sell Grapefruit at Apshawa Groves*" — Dr. W. Husmann, Mgr.

"*Some Hedging Operations in Grapefruit Production*" — Jackson A. Haddox Assistant Agriculutral Agent, Polk County

"*Studies on Grapefruit Fertilization*" — Dr. Paul F. Smith, Plant Physiologist, U. S. Horticultural Station, Orlando

"*Newer Trends in Handling Fresh Grapefruit*" — Dr. H. M. Vines, Associate Biochemist, Citrus Experiment Station (Fla. Citrus Commission,) Lake Alfred

INTERMISSION

"*Solving Marketing Problems of Fresh Florida Grapefruit*" — Don Lins, Gen. Sales Manager, Florida Citrus Exchange Tampa

"*Some Special Grove Equipment Developed at Woodmar Groves*" — Lail Morthland, Weirsdale, Grower

"*Operating Farm Tractors Efficiently*" — Dalton Harrison, Assistant Agricultural Engineer, Agricultural Extension Service

*Farm Equipment Display* — Dalton Harrison

12:30 PM Dinner — Mess Hall

1:30 PM Afternoon Session — Auditorium

Fred P. Lawrence, Citriculturist, Presiding

BIOLOGICAL INSECT CONTROL

"*What Does Biological Control Do for the Citrus Grower Now?*" — Dr. M. H. Muma, Entomologist, Citrus Experiment Station, Lake Alfred

"*What are the Possibilities for Improving Biological Control?*" — A. G. Selhime, Entomologist, U. S. Horticultural Station, Orlando

"*Some New Approaches to Insect Control*" — Dr. A. K. Burditt, Entomologist, U. S. Horticultural Station, Orlando

INTERMISSION

PRUNING, HEDGING AND MECHANICAL HARVESTING

"*Rejuvenation and Shaping Citrus Trees to Fit Future Needs*" — Fred P. Lawrence

"*Tree Thinning and Spacing*" — R. E. Norris

"*Review of the Mechanical Picker Situation*" — G. E. Coppock, Associate Agricultural Engineer, Citrus Experiment Station (Fla. Citrus Commission)

*Questions and Answers*

4:00 PM — Adjourn — Swimming, Boating, Fishing, etc.

6:15 PM — Supper — Mess Hall
8:00 PM — Entertainment — Auditorium
G. T. Huggins and Morris Anderson

*WEDNESDAY, AUGUST 9*

K. S. McMullen in Charge

7:15 AM Breakfast — Mess Hall
8:45 AM Morning Session — Auditorium

ANNOUNCEMENTS

Henry Swanson, Orange County Agricultural Agent, Presiding

PLANTING ON FLATWOODS SOILS

"*Land Preparation, Erosion and Water Control*" — Dr. Al Willson, Division Manager of Horticultural Services, Minute Maid Co.

"*Rootstocks and Varieties*" — Dr. F. E. Gardner, Horticulturist, U. S. Horticultural Station, Orlando

"*Some Comments on Research with Wind Machines and Heaters*" — Dr. John F. Gerber, Assistant Climatologist, Fruit Crops Dept., University of Florida

INTERMISSION

"*Fertilization and Other Cultural Practices on Flatwoods Soils*" — Dr. W. F. Spencer, Associate Soils Chemist, Citrus Experiment Station

"*Summary of Discussions on Flatwoods Soils*" — Dr. H. J. Reitz, Horticulturist in charge, Citrus Experiment Station

*Questions and Answers*

12:15 PM Dinner — Mess Hall

1:30 PM Afternoon Session — Auditorum

Jack T. McCown, Assistant Citriculturist, Presiding

"*Activities at the Citrus Research Foundation Grove*" — Dr. W. C. Cooper, Project Leader, U. S. Horticultural Station, Orlando

SOME ECONOMIC DEVELOPMENTS

"*The Citrus Outlook*" — Dr. W. E. Black, Marketing Specialist, Fla. Citrus Commission

"*What's Ahead of Us in Marketing?*" — Marvin H. Walker, General Manager, Florida Citrus Canners Cooperative, Lake Wales

INTERMISSION

"*Some Factors that Affect Per Capita Consumption of Citrus*" — Robert C. White, Price Analyst, Florida Citrus Mutual, Lakeland

"*The Outlook for Citrus Exports in the '60's*" — Martin Hearn — Export Manager, Florida Citrus Mutual (Tentative)

*Questions and Answers*

4:00 PM — Adjourn — Swimming, Fishing, Boating, etc.
6:15 PM — Supper — Mess Hall
8:00 PM — Entertainment — Auditorium
G. T. Huggins and Morris Anderson, in charge

*THURSDAY, AUGUST 10*

K. S. McMullen in Charge

7:15 AM Breakfast — Mess Hall
8:45 AM Morning Session — Auditorium

ANNOUNCEMENTS

Ernest C. Lundberg, Assistant Seminole County Agricultural Agent, Presiding

PRODUCTION MANAGEMENT PROBLEMS

"*Experiments with Foliar Sprays on Citrus*" — Dr. Clifford Nolan, Assistant Technical Director, Soil Science Foundation, Lakeland

"*Results of Experiments with Captan*" — Dr. A. H. Krezdorn, Head, Fruit Crops Department, University of Florida

"*Status of Research with the Citrus Blight Problem*" — Dr. J. F. L. Childs, Plant Pathologist, U. S. Horticultural Station, Orlando

"*The Cause and Control of Footrot*" — Dr. Gordon Grimm, Plant Pathologist, U. S. Horticultural Field Station, Orlando

INTERMISSION

"*The Value of Individual Citrus Trees*" — Zach Savage, Agricultural Economist, Agricultural Experiment Station

"*Making Tangerines Pay Their Way*" — Everette Fischer, Assistant Marion County Agricultural Agent

"*Precautions in the Use of Herbicides*" — Jack T. McCown

"*Results with Different Kinds of Oils*" — W. L. Thompson, Entomologist, Citrus Experiment Station

12:30 Dinner — Mess Hall

1:30 PM Afternoon Session — Auditorium

Robert M. Davis, Assistant Hillsboro County Agricultural Agent, Presiding

"*Some Problems Facing Florida Agriculture*" — Dr. M. O. Watkins, Director Florida Agricultural Extension Service

"*Modernizing the Fresh Fruit Packing House*" — Dr. W. Grierson, Food Industries and Engineering, Winter Haven

"*The State Department of Agriculture and its Relation to the Citrus Industry* — Hon. Doyle Conner, Commissioner of Agriculture

INTERMISSION

"*The Budwood Registration Program*" — Gerald Norman, In Charge, Division of Plant Industry, State Department of Agriculture

"*The Bond and License Law*" — Robert C. Evans, Director of Administration, Florida Citrus Commission

"*Progress Report on Chemicals for Control of Spreading Decline*" — Dr. R. F. Suit, Plant Pathologist, Citrus Experiment Staton, Lake Alfred

*Questions and Answers*

4:00 PM — Adjourn — Swimming, Boating, Fishing, etc.
6:15 PM — Supper — Mess Hall
8:00 PM — Entertainment — Auditorium

*FRIDAY, AUGUST 11*

7:15 AM Breakfast — Mess Hall
Institute Adjourns

# New Features In Use Of Citrus Products Emphasized At Mutual's Annual Meet

Two new citrus products, with "almost limitless mass market potential," were introduced by Robert W. Rutledge, Florida Citrus Mutual executive vice president, at Mutual's 13th annual membership meeting in Winter Haven, June 20th.

These are an orange product made by a new freeze-drying process and "grapefruit gold," a new automobile paint made from citrus peel oil.

During his annual report, Rutledge converted samples from the freeze-drying process into full-strength orange juice.

"This product, made especially for us in England from Florida oranges, has an almost unlimited shelf life," Rutledge said. "The product does not require refrigeration. These are the first Florida oranges to be processed this way. This product was made for us by Vickers, Armstrong, Limited. There is only one commercial plant in the world now using accelerated freeze-drying for processing meats and vegetables. This is in southern Ireland and approximately $150,000,000 has been spent thus far in perfecting the process. We are working with Vickers in the development of this citrus product."

Dramatizing the "grapefruit gold," Rutledge "unveiled" an automobile painted with the product.

"This is the first and only automobile painted with a paint made with a citrus by-product. It is a dramatic demonstration of what scientific and imaginative research can do in helping us to find new and profitable uses for our grapefruit, and other Florida citrus. Peel oil from approximately 10 boxes of grapefruit was used in making paint for the experiment," Rutledge said.

Rutledge recommended a $700,000, three-point program to boost Florida grapefruit sales next season and to provide additional funds "for basic grapefruit product research we believe could result in finding more profitable uses for Florida grapefruit. At the present time there is very little if any of this type research being conducted."

Rutledge's proposal also calls for supplemental grapefruit advertising and merchandising "to increase both our domestic and overseas markets."

He said "Mutual is looking into this program at this time so that we will be ready next season to augment our efforts to develop more profitable grapefruit outlets.

ROBERT W. RUTLEDGE
EXECUTIVE VICE PRESIDENT
FLORIDA CITRUS MUTUAL

If the Rutledge program is approved, it would be the first use of the Stabilization Amendment to the Florida Citrus Code. The amendment, under which growers have the right to develop new research and marketing programs and to pay for these programs themselves, was enacted by the 1961 Florida legislature.

In his demonstration of the "grapefruit gold" automobile Rutledge said:

"We have good reason to hope that the Ford Motor Company, a pioneer in the development of soybean by-products for commercial uses, will use substantial quantities of this paint on its 1962 models. It is interesting to note that the same scientist who developed soybean oil-based paint a quarter of a century ago also made this 'grapefruit gold' paint for us.

"We believe these two products have an almost limitless mass market potential for Florida citrus."

In previewing the 1961-62 Florida orange season, Rutledge said "growers can expect very favorable on-tree returns."

"There is already some advance buying of 1961-62 Florida oranges at 40 cents per pound of solids," he said, adding that this price measure which is generally followed for oranges utilized in frozen concentrate "reflects about $2.00 per box on-tree."

"The demand for Florida oranges and orange products next season will be healthy," Rutledge said. "Our nation's business economy is accelerating and purchasing power is increasing. We expect consumer disposable income, the amount of money Americans will spend for goods and services, will reach record highs during our coming citrus season."

He said that Florida's orange supply would be "up" next season, "but, because of dry weather throughout our citrus-producing areas since last November, millions of boxes short of our first 100 million-box crop we had originally anticipated."

He predicted that 1961-62 oranges would mature earlier than this year, "giving us a longer marketing season."

"The industry's frozen orange concentrate inventory next December 1 will be about 12 million gallons, a business-like and an entirely workable start for the new concentrate season," he said.

Rutledge forecast the 1961-62 tanger-

SOUTHERN DOLOMITE
PALMETTO, FLORIDA
PHONE: BRADENTON 2-1411

ine crop at "much less" than the past season's five million box production, but also would mature earlier.

"Normal maturity of tangerines next season will permit volume sales for the holiday periods and other high demand months," he said. "This factor alone gives us a favorable price outlook for next season's tangerines."

In emphasizing the need to invoke the Stabilization Amendment for grapefruit, Rutledge said:

"Our growers must face the fact that demand for grapefruit is decreasing.

"With Florida grapefruit production next season expected to be substantially up from 1960-61, and with a larger Texas grapefruit crop in prospect, it is imperative that we do something about it to assure our grapefruit growers their proportionate share in the general prosperity we expect for the Florida citrus industry in 1961-62."

Rutledge, praising the 1961 Florida legislature for its "enactment of the most constructive citrus legislative program since 1936, "introduced members of the House and Senate citrus committees.

"These public officials, with unanimous support of their fellow legislators, have made it possible for Florida citrus growers to run their own business, and for paying their own way for what they want," Rutledge said.

## STOCKS USED FOR CITRUS

(Continued from Page 3)

were largely on lemon. Satsumas were mostly on trifoliata and sour stocks. Murcott and Ponkan were largely on cleo.

Persian limes were mostly on lemon each season. Most lemon varieties were largely on lemon. An exception in 1956-57 was the Harvey variety which was on sour orange, and in 1957-58 this variety was mostly on cleo. The Sicily lemon was mostly on sour in 1958-59. Thirty-five percent of Everbearing was on their own root in 1954-55 and 1956-57, 61 percent in 1955-56, 42 percent in 1957-58, 2 percent in 1958-59 and 24 percent in 1959-60.

Higher proportions of Orlando and Minneola were on cleo root in 1956-57 and 1958-59. In 1953-54 Thornton and Umatilla were heavy to sour orange. However, in 1955-56 and 1957-58 none of these two varieties was on sour. In 1955-56 and 1957-58 all the Thorntons were on lemon. The Seminole was largely on sour orange each season except in 1957-58 when 74 percent was on sweet seedling. Sixty-seven percent of the tangelo movement was the Orlando variety in 1953-54, 73 percent in 1954-55, 85 percent in 1955-56, 82 percent in 1956-57, 79 percent in 1957-58 and 1958-59, and 58 percent in 1959-60. Thirty-eight percent of the Orlando was on cleo in 1953-54, 45 percent in 1954-55, 67 percent in 1955-56, 59 percent in 1956-57, 34 percent in 1957-58, 43 percent in 1958-59 and 30 percent in 1959-60.

Kumquats and limequats were mostly on trifoliate. Calamondin made up more than 78 percent of the Miscellaneous group with lemon and trifoliata the chief stocks each season except in 1957-58 when 30 percent was on cleo, in 1958-59 when 22 percent was on sour and in 1959-60 when 47 percent was on their own root. Over half of Shaddock was on sour in 1955-56, 1956-57 and 1959-60; while 80 percent was on sour in 1957-58 and all was on lemon in 1958-59.

---

Recently at the University of Florida, researchers from various subject matter fields in the College of Agriculture were asked to take a serious look ahead to developments in their respective areas over the next 25 years.

# Nurserymen, Growers Hold Short Course

Sales, merchandising and credit were emphasized during the 7th Annual Nurserymen and Growers' Short Course at the University of Florida held in Goinesville on June 15-16.

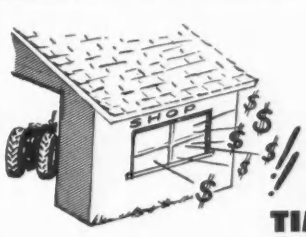
Conducted jointly by the Agricultural Extension Service, Agricultural Experiment Stations and the College f Agriculture, the theme of this year's program was "increase learning to increase earning."

Sessins opened in McCarty Hall Auditorium at 11 a.m., Thursday, June 15, following registration.

Thursday's program included a tour of research facilities and reports on research progress and a panel discussion of research and production problems.

Friday, program headquarters shifted to the Student Service Center. Morning sessions dealt with garden center promotions, trade organizations and marketing information.

Friday afternoon discussions centered around marketing methods and the subject of credit.


IS YOUR
TREE HOE
MAINTENANCE
EAT'N UP THE SAVING?
TIME HAS TOLD THE STORY

See Why HUTCH-HOE Owners
ARE SAVING MONEY INSTEAD of SPENDING

The Hutch Hoe has:
SIMPLICITY in design & operation
OIL BATH ENCLOSED chain drive
FEWER moving parts
3 FT. - 4 FT. - 5 FT. Cultivating widths

CALL TODAY FOR DEALER NEAR YOU
HE CAN HELP YOU KEEP YOUR COST DOWN
FITS MOST ALL MAKES UTILITY TRACTORS

DESIGNED & MANUFACTURED BY Hutchinson

ORLANDO —
GA 5-7588 — 1216 W. Central Ave.
WINTER HAVEN —
CY 3-5552 — 3400 Havendale Blvd.

ADVERTISEMENT — LYONS FERTILIZER COMPANY

# The LYONIZER

COMPILED BY THE LYONS FERTILIZER COMPANY

## Reports Of Our Field Men . . .

### SOUTH HILLSBOROUGH, MANATEE AND SARASOTA COUNTIES

**R. C. Revels, Jr.**
**P. O. Box 3332, Apollo Beach, Fla.**

Scattered showers have brought relief to most citrus growers in this section, however a lot more rain is needed. All of the trees have put out new growth and a fairly large June bloom is evident in most groves. Most of the summer application of fertilizer has been applied and general cleaning out of groves is being done now.

Summer oil sprays should be applied as soon as there is enough moisture in the ground. If oil is applied while it is too dry, you could get a big leaf drop. Scale is showing up in most areas now along with rust mites and aphids. Zineb should be applied with the oil to clean out the crop of rust mites.

### HIGHLANDS AND POLK COUNTIES

**R. E. Lassiter, Jr. & J. E. Rubush**
**P. O. Box 1304**
**Winter Haven, Fla.**

Due to the lack of rains in some areas growers are having to irrigate their groves. We have experienced scattered showers in the last few weeks, but the summer rains have not been evident throughout the county.

Growers are just finishing their summer fertilizer application. The fertilization of young trees every month or six weeks should continue throughout the summer. Since some areas are rather dry the young trees should be checked for moisture condition in the soil.

If soil samples have not already been taken now is a good time for growers to see that this is done. Where the pH values and calcium level in the soil is low dolomite or lime should definitely be added. Where the pH value is too low you cannot expect full benefit from the fertilizer applied.

If mites, red scale, mealybug, or black scale, are now a problem, the summer spray should be applied early. Due to the fact of the dry weather our oil sprays may have to be delayed. If rust mite are building up a dust should provide protection until the oil and zineb can be applied. July sprays will control whitefly and provide better greasy spot protection to the summer flush. Where sulfur is used there should be a waiting period of from three to four weeks before oil is applied. The summer oil should be applied before the 15th of July.

### WEST HILLSBOROUGH, PASCO AND PINELLAS COUNTIES

**Calvin P. Lloyd, III**
**Tampa, Fla.**

The rains of the past few weeks have been a great help to our growers. The trees have come out of their wilt and are beginning to show a new growth flush. In many groves good bloom has come along with the new growth flush. The trees in general look very good, but many are going to have a short crop due to the long dry period.

Rust mites are very numerous in many groves, and some growers have already dusted prior to the usual summer oil and zineb spray application. The spider mites have ceased to be a problem, but a few groves are already showing an early red scale build-up.

The summer oil and zineb is one of the most important, if not the most important spray application of the year. This spray controls our scale and mites and is a general clean-up spray for the whole year.

### NORTH CENTRAL FLORIDA

**V. E. Bourland**
**Winter Garden, Fla.**
**Phone 107**

We finally have gotten showers in most sections enough to help citrus. Most groves have really suffered, and lost lots of fruit that was large enough to stick, but everyone is expecting a June bloom, the groves that got first showers already have bloom, the outlook now is that the fruit crop will be considerably short. Young groves have been taken care of with water, and are looking good. Most all grapefruit has been moved, and most all Valencias. Majority of licensed fruit men have closed down operation for the season. Most all growers are keeping busy working, spraying, and fertilizing.

### SOUTH POLK, HIGHLANDS, HARDEE AND DeSOTO COUNTIES

**C. R. Wingfield**
**Phone: Glendale 3-4537**
**Avon Park, Fla.**

By the middle of June we were having rains over this area but were rather scattered. By this time we have had enough to get us out of trouble and hope rains will continue. With good moisture the growers have jumped into the summer application of fertilizer and it is almost finished. Young tree applications will continue at 60 day intervals during the summer. There are some plans for supplement applications, possibly in August, on heavy cropped trees to assure size of fruit.

The new fruit crop is showing up very good in some locations while in other areas where the crop is light it looks like we will have a late bloom.

During our dry months of April and May there has been a heavy buildup of Rust Mite and other mite insects. Oiling and other planned spray programs are under way to bring them under control.

### HILLSBOROUGH, PASCO AND SUMTER COUNTIES

**C. W. Dean**
**Gibsonton, Fla.**
**Phone Tampa 40-2592**

With a few scattered showers over this part of the state it has put the various crops in fair condition. There are places that haven't had more than a couple of light sprinkles.

Have noticed quite a lot of June bloom on trees that haven't a good setting of fruit on the tree. These I have noticed in the sections that the rains have been heavier.

It is time for the oil sprays to be applied; however, moisture conditions are varying so that it could be a little dangerous to apply. Then too, those growers that haven't a good setting of fruit and those trees are coming with this June bloom, spraying at this stage won't do that bloom any good.

ADVERTISEMENT — LYONS FERTILIZER COMPANY

## *Uncle Bill Says:*

Like most everything else in the world they has been a lot of changes made in the producin' of fruits and vegetables . . . back in the old days it was simply a matter of plantin' the seeds or the trees, and then lettin' the rich soil furnish the plant food which caused the vegetables or trees to mature and produce their crops.

As time went on the more ambitious farmers discovered that cultivatin' the soil helped crops to grow bigger and better, then the better farmers found that the fertilizer which they had in those early days, which consisted mostly of animal fertilizer, still further aided their crops.

Then as science, knowledge and research came into being it was learned that they was a lot of unsuspected ingredients which could be made into fertilizers which would still further aid in developin' finer crops . . . and this sort of procedure is still in effect today 'n very few years pass by without some new elements bein' discovered which helps produce bigger 'n better crops.

This business of findin' new and better food elements to help our crops comes under the head of evolution, just as is the case in the invention of newer and better machines and in the improvement of our personal livin' standards.

'Course as the volume of our crops increased insect and other pests began their attacks upon our crops and means had to be evolved to control these pesky little buggers, which resulted in the development of insecticides and other means of controllin' 'em.

We are still developin' new means of improving and protectin' our crops and probably will be doin' just that for many, many years to come, for this purpose is just as much a part of agriculture as developin' new household gadgets and thousands of other things.

Florida is mighty fortunate in having so many thousands of intelligent farmers and highly trained technical advisors to help 'em keep abreast of all the latest production practices . . . which is why Florida produces more fine fruit and choice vegetables than any other state in the union.

# Girdling To Increase Fruit Set ... Use It Cautiously

. . . BY . . .
A. H. KREZDORN

Certain varieties of citrus (Orlando and Minneola tangelos, Clementine tangerines and various strains of navel oranges) often fail to set satisfactory crops of fruit because of a faulty reproductive system. This is not true of most citrus varieties and so many Florida citrus growers do not fully understand the difficulties involved.

In brief, satisfactory fruiting is tied-in with the process leading to seed production. This involves the transfer of pollen to the stigma (tip) of the pistil (the female reproductive organ), the germination of the pollen on the stigma, the growth of pollen "tubes" into the ovary, sexual fertilization and subsequent development of the ovules into seeds. The biochemical processes involved have not been completely worked out by plant scientists but enough is known to generalize.

Concurrent with pollination and sexual fertilization is the production of chemical growth regulators that prevent abscission of the ovary and cause it to enlarge. As the seeds develop, further growth regulator production helps prevent abscission and results in the enlargment of the ovary into a mature fruit.

When Orlando, Minneola and Clementine are grown in solid plantings, seed production fails to take place. This is because their pollens, even though viable, will not function on their respective pistils. Thus, they are self-sterile (will not produce seeds when self-pollinated) because of an incompatibility between the pollen and the pistil. The failure of these varieties to produce seed following self-pollination results in unfruitfulness.

With navel oranges, the failure to produce seeds also results in unfruitfulness but the lack of seeds is due to somewhat different reasons. Most of the pollen mother cells and ovules degenerate at an early age, resulting in sterile pollen and non-functional ovules. Having neither the pollen to bring about fertilization nor functional ovules, the high degree of seedlessness in navels is easily understood.

For Orlando, Minneola and Clementine the recommended corrective measure is to interplant with Temple orange. Honey bees transfer the pollen from the Temple to the other varieties and seeds result because Temple pollen is compatible with the pistils of each of these varieties. This is not a solution for navels because seed production is precluded by the non-functional ovules of this variety.

On the other hand, the above unfruitful varieties always produce a few fruit without seeds and at times large seedless crops. This is because they are parthenocarpic. Parthenocarpy is the production of fruit without the stimulus of sexual fertilization. Parthenocarpy is not uncommon in citrus and in some varieties, such as Burgundy grapefruit, fruiting is consistently good despite a high degree of seedlessness. For the varieties in question the degree of parthenocarpy is much weaker. Because of the weakness of the parthenocarpy, these varieties are much more likely to drop their fruit when subjected to various environmental and physiological stresses than are seedy and strongly parthenocarpic varietes. In some years the degree of parthenocarpy is greater than in others. In general, the ability of these varieties to fruit parthenocarpically can be thought of as being just below that needed for satisfactory fruiting, and any practice that strengthens their parthenocarpic tendencies, even slightly, is often enough to "push" them over the fruiting threshold.

One very old horticultural practice that often increases parthenocarpy is trunk girdling. During the past several years numerous experiments involving the girdling of Orlandos and navels have been conducted and a lesser number with Minneola and

**KEEP INFORMED**

On Matters
Pertaining To Citrus Production
By Reading
THE CITRUS INDUSTRY
Every Month

Tear Out and Mail Coupon Below

The Citrus Industry,
Bartow, Florida

Please send me The Citrus Industry for 1 ( ), 2 ( ), or 3 ( ) years.

Name _____

Address _____

_____

SUBSCRIPTION RATES:

1 Year $1.00 — 3 years $2.50 — 5 years $4.00

Clementine. This involves making a single knife cut through the bark and completely around the trunk. Almost invariably, yields have been increased.

With Orlandos the results have been particularly striking and only where severe stress, resulting from heavy defoliation by greasy spot, was evident has girdling not resulted in large yield increases. The fruit produced through girdling has been seedless and of satisfactory size, although not as large as seedy fruit. This has been true not only in highly unfruitful blocks but in groves in which the yields were satisfactory. Girdling Clementines has given good yield increases but the fruit was disappointingly small. Seedy fruit is much larger. Girdling navels has nearly always resulted in increased yields but the increase has frequently been very small—less than a half box per tree; young (6 to 12 years of age), vigorous, heavy blooming trees have responded best.

Because of these results, the Florida Agricultural Experiment Station recommends girdling Orlandos as a **stop gap** measure until proper pollinators are provided. Also, the Orlando is relatively tolerant and the Temple rather sensitive to cold. For cold areas the Dancy tangerine, which is satisfactory as a pollinator in those years that it blooms satisfactorily, can be used and the Orlandos girdled only in those years that Dancy bloom is either too sparse or fails to overlap that of Orlando. Girdling is certainly not a completely satisfactory answer for navels, even on a temporary basis; however, it offers some relief to those growers who have extremely unfruitful groves and it is suggested in this respect only.

Unfortunately many growers are girdling young trees (2-3 years old), trees damaged by water, foot rot and viruses, and old trees in a state of decline for one reason or another. **Prerequisites for successful girdling are good tree vigor and a good bloom and it is poor practice to girdle under other conditions.**

Because girdling of Orlandos has been successful, numerous growers girdled shy bearing Valencias on Sour orange and Cleopatra mandarin rootstocks in 1961. In the absence of specific research on girdling Valencias in Florida, small trials by growers to determine its influence on shy bearing Valencias is reasonable, but girdling large acreages on the basis of evidence in hand is highly questionable. A case of point is that some growers have reported scaling and gumming at the girdles on old Valencia and navel trees that showed leaf but not bark symptoms of psorosis. Since wounding psorosis infected trees by topworking or by freeze damage has at times caused bark symptoms of the virus to appear, this would seem to be a valid observation and girdling trees having leaf symptoms of psorosis should be avoided.

There is also the possibility that girdling might provide entrance for foot rot. Even though this has not proved to be a problem to date, it is good judgment to make the girdle as high on the trunk as practicable. Where the main branches arise so near the ground that a trunk is almost lacking, each of these branches should be girdled.

It should also be remembered that, with the exception of certain varieties of grapes, the history of girdling fruit plants in other areas of the world indicates that consistent success with girdling over a period of years is very unusual. The extreme vigor and heavy flowering of the Orlando favors continued success but, until success has been attained for a large number of consecutive years, girdling should not be looked upon as a permanent solution even for this variety.

## SMITH NAMED ACTING ADMINISTRATOR OF AGRICULTURAL MARKETING SERVICE

Secretary of Agriculture Orville L. Freeman has announced the appointment of S. R. Smith as Acting Administrator of the Agricultural Marketing Service of the U. S. Department of Agriculture. Mr. Smith moves up to the new post after 15 years service as director of USDA fruit and vegetable marketing activities. He succeeds O. V. Wells, who retired as AMS Administrator on May 31 to go with the Food and Agriculture Organization of the United Nations as Assistant Director-General, in charge of the Economics Department. Mr. Wells will be at the FAO headquarters in Rome. Mr. Smith has been in USDA service for 27 years, joining the Department in 1934 as an agricultural economist specializing in price analysis on fruit and other crops.

FOR
fun
IN
FLORIDA
PAUL MILLER
BEACH MOTEL
Bring the family for a marvelous vacation right on the ocean. Lovely apts., air-conditioned and heated, phones, TV. Wading pool, swimming pool, shuffleboard, fishing. Private beach. Fabulous dining at the Surfrider Restaurant. Credit cards honored.
501 N. Miramar Ave.
MELBOURNE
MEMBER
CONGRESS
OF
MOTOR HOTELS
FREE!
Write for literature and new TRAVEL GUIDE listing fine motels from coast to coast, inspected and approved by Congress of Motor Hotels.

## ACREE IS RENAMED HEAD OF FLA. CITRUS MUTUAL

W. Max Acree of DeLand was re-elected president of Florida Citrus Mutual following the big citrus grower meeting in the Florida Citrus Building in Winter Haven.

The 21 directors, elected in seven district meetings late in May and Early June, met in the building's Florida Room following the program in Nora Mayo Hall, attended by more than 2500, and effected the reorganization for the new fiscal year.

## BRYANT URGES CITRUS BOARD TO BROADEN ITS AD PROGRAM

Governor Farris Bryant has directed new members of the citrus commission to create an advertising campaign designed to make everyone think of Florida when they see an orange.

The six newly-appointed members of the 12-man commission met briefly in the cabinet room with Bryant and members of the governor's citrus advisory committee. No formal meeting was held.

However, Bryant gave the men a pep talk urging expanded promotion of Florida and citrus, all in one fell swoop. Bryant said everywhere he went in the United States, the words Florida and citrus meant almost the same thing in the minds of the people.

He said the commission should plan a cooperative program with other state agencies to push citrus every time some other facet of Florida was placed before the public. In game and fresh water fish advertisement, he said, the picture of a citrus grove could be included. The same could be done in development commission ads, he said.

Bryant noted the proposed program was "much broader" than just a citrus promotion plan. "We want to have a state that is better to live in than it otherwise would be," said Bryant.

The governor gave the new commission members no specific instructions. But he suggested a new look at the present advertising and promotion program. And he added, "if it's good, keep it the way it is. If it ought to be changed, change it."

Long-time member Key Scales, Jr., Weirsdale, agreed. Scales was reappointed by Bryant. He said the advertising program should be re-evaluated, if only to keep the agency handling the program on its toes.

Bryant and agriculture commissioner Doyle Conner, offered their offices' aid in setting up a new program. Conner praised the citrus industry for its promotional job in the past. He said if other agriculture producers had done the same job, there would be no depressed areas in the state today.

"The citrus industry has done a good job of exercising its independence and yet getting the job done," Conner said.


## Classified Ads

NURSERY STAKES — Galvanized Steel. New 3/16" x 30" (Standard). $35.00 per 1,000 while they last. Cauthen Grove Service and Farm Supply, Leesburg, Florida, Phone ST 7-3516.

CHOICE CITRUS LAND. 441 acre tract about surrounded by groves from recently set to what I believe finest in State. Informed during 5 years previous has produced 18 to 21 boxes per tree. Believe ¾ of 441 acres suitable for citrus. Two lakes. It is also beautiful setting for Country Estate with well distributed big trees on the hill areas. $175,000.00 subject to prior sale. $52,000.00 cash. Remainder in 8 to 10 year annual payments of equal amounts per year. P. O. Drawer 3589, Orlando, Florida.

REGISTERED AND NON-REGISTERED
**DANCY TANGERINES**
ON LEMON and Murcotts on Cleo for immediate delivery. Limited quantities of standard and fancy varieties still available for Summer planting. Make your reservations for Fall '61 and Spring '62 deliveries NOW to assure availability of budded stock you require. Write
**GRAND ISLAND NURSERIES**
P. O. Box 906
EUSTIS, FLORIDA

TO BUY OR SELL CITRUS GROVES — write JOHN J. BRENNAN
P. O. Box 1537 Lakeland, Florida

ORDER TREES FOR NEXT YEAR. Pre-season ordering assures your needs! You know our SELECT BREEDING and VIGILANT CARE provide quality and competitive price. Call ADAMS CITRUS NURSERY, Winter Haven, CY 3-5672 or Lakeland Mobilephone JR608.

USE VITILIZER to increase production and control Gumosis and Footrot inexpensively. Phone or write for free details. Harp & Ramsey, P. O. Box 347, Lutz, Florida. Phone WE 9-4631.

**SUPERIOR REGISTERED**
**CITRUS TREES**
Free of psorosis and xyloporosis. Grown on virgin certified nematode-free land.
All commercial varieties budded on rough lemon, sour orange, sweet orange and Cleopatra rootstocks.
Place orders now for Fall 1961 and Spring 1962.
For quotations Call or Write
**WARD'S NURSERY, INC.**
Box 846 Avon Park
GLendale 3-4657 day or 3-4433, nite

ARE YOU THINKING ABOUT NEW GROVES? Stay informed all year. Our monthly NEWSLETTERS are FREE! Place your Name and Address on our confidential Mailing List. Write: Newsletter, Dept. I, ADAMS CITRUS NURSERY, 122 W. Central Ave., Winter Haven.

**GROVE PROBLEMS?**
Consult Dr. Wolf to bring back and keep your grove in top condition. Phone or write for free details.
**DR. WOLF'S LABS**
2620 Taylor St.
HOLLYWOOD, FLORIDA
Phone: WA 2-2808

LOOK NO FURTHER
We have the Registered Trees you need for young grove or for replanting.
Prices quoted on request.
CRESCENT FARMS
P. O. Box 890 Bradenton, Florida
Phone 2-3821 or 2-7004

FOR SALE: Specialized Grove Equipment for your Utility Model Tractor: Fenders; Fender Skirts; Operator's Shields; Drawbars; and Bumper, Grill, & Light Guards. Contact COUNTY EQUIPMENT COMPANY, INC., WAUCHULA, FLORIDA.

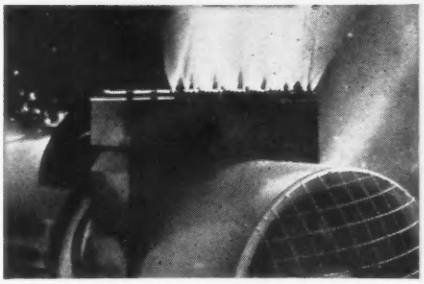
FOR SALE — 120 Acres — 75 planted 1-2-3 yrs. old heavy to Valencias. N.W. of Lake Pierce, near Lake Wales. Terms—29% down, balance 5 years. For information call J. Lewis Garrett, Bartow 533-2207.

# John BEAN SPEED SPRAYERS

*FIRST IN* **PERFORMANCE • FEATURES • FLORIDA**

**FLORIDA BUILT FOR FLORIDA GROVES**

Effective grove protection depends not only upon air volume, but also upon air handling and direction control. Speed Sprayer gives you all three . . . skillfully engineered for thorough, penetrating tree coverage even in critical dense areas in the topmost center branches. Experience is partial proof of Speed Sprayer superior performance — John Bean engineers have pioneered and developed air handling since the late 30's. For final proof, ask grove owners who use Speed Sprayers to protect almost 85% of Florida's commercial citrus acreage! Ask us for demonstration proof in your grove.



NEW VOLUTE ATTACHMENT
Oscillates air stream to open up thickest foliage for positive, through-the-tree spray coverage. Available for either right or left discharge or double delivery.

## *"LITTLE"* FEATURES MAKE THE DIFFERENCE IN SPEED SPRAYER QUALITY

**RUST-RESISTANT TANKS** are protected by exclusive Metallizing process — no rust to clog nozzles, longer tank life assured.

**SPRAY MATERIAL SIGHT GAUGE** saves time, eliminates guesswork. Shows exactly the level of spray material in the tank.

**NEW, DRY-TYPE AIR CLEANER** Efficient, heavy duty air filter traps dirt, minimizes engine "down-time". Control panel light automatically signals when filter needs cleaning.

**HEAVY CHANNEL BOX FRAME** Arc-welded frame with multiple cross members won't twist or bend even over roughest terrain.

**DEMONSTRATION PROOF IN YOUR GROVE!** See for yourself how Speed Sprayer performance gives you best coverage . . . best protection for your trees. Ask us for a demonstration in your grove. Call or write Orlando plant for full details — also ask about our liberal trade-in and financing plans.

For latest data on
SHUR-RANE
Reg. U.S. Pat. Off.
ENGINEERED IRRIGATION
write us at Orlando

CONTACT
**Speed Sprayer Plant, Orlando, Fla.**
**also southern sales headquarters for BOLENS outdoor power equipment**

John BEAN®
DIVISION OF
FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING, MICHIGAN • ORLANDO, FLORIDA • SAN JOSE, CALIFORNIA
fmc

# The Fruit You Produce Can Be No Better Than Your Trees

For a long, long time every grower has been aware of the fact that High Quality Fruit brought him better returns for his citrus crop than inferior fruit would bring.

And it is just as much a foregone conclusion that in order to raise High Quality Fruit in adequate volume it is necessary to have strong, healthy trees.

In order to have such trees Florida Growers have long since adopted the practice of seeing that their citrus trees were adequately and properly nourished by the application of high type fertilizer which has been designed to care for the requirements of each particular grove.

The fact that so large a number of the state's most successful growers have continued throughout the years to apply Lyons Fertilizers to their groves furnishes ample proof of the high quality of our fertilizers as is reflected in the exceptionally fine crops they produce.

In the event you have problems in cultural practices or in production we are prepared to help . . . our Field Service Men will gladly give every possible service and counsel to you.

*LYONS FERTILIZERS Produce MAXIMUM CROPS Of FINEST QUALITY*

## Lyons Fertilizer Company

Phone 43-101

Tampa - Florida